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Training device for sport involving striking or throwing - has
band with switch attached to wrist of hand holding racket and
other band to fingers to indicate bending of wrist when ball is hit

BERKELEY J 03.10.80-CA-361557

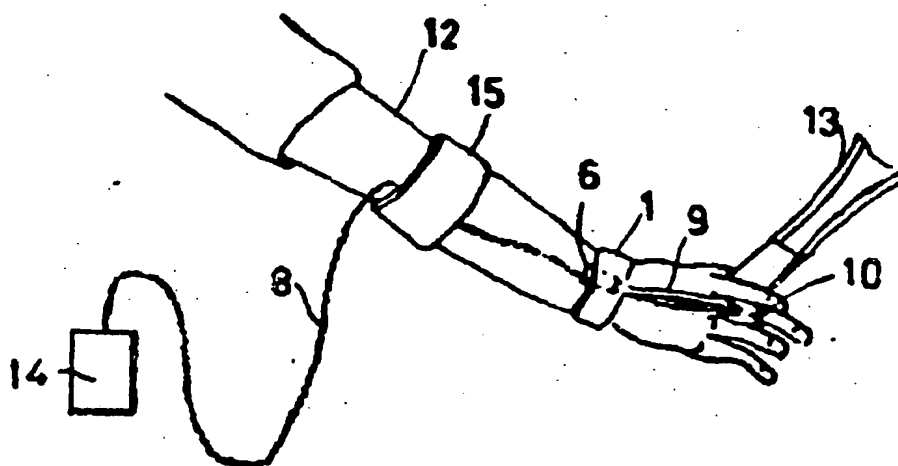
W04 (14.06.83) A63b-23 A63b-69/38

03.10.80 as 361557 (989AR)

The device comprises appts. for emitting an audible or visible signal when an undesirable movement of a body part takes place. A pair of bands are provided, each one of which is removably attachable to each of two adjacent, flexibly joined parts of the body. A pull type of electrical switch is attached to one of the bands, and its pull cord is directly attached to the other band, so that the bending of one of the body parts, in relation to the other, pulls and activates the switch, as long as the pull cord is in tension.

An electrical sounding or lighting device is activated by the switch. The device also includes batteries for supplying power to the device, and a device for recording the number and frequency of the signals. (6pp Dwg.No.2/3)

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(54) SPORTS TRAINING DEVICE

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(21) APPLICATION No. 361,557

(22) FILED 801003

No. OF CLAIMS 3

Canada

A B S T R A C T

This invention is a device which is used by beginner tennis players, or players in similar games, in learning the control of the bending of the wrist. It consists of a wrist band and a finger band which are joined together so that the bending of the wrist during the playing of the game pulls and activates an electrical switch which is attached to one of the said bands, thus activating a sensor which gives a audible or visible signal, and which, at the same time, makes a graphic record of the bending of the wrist, which can be studied at a future date, for the purpose of analysis and correction.

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S P E C I F I C A T I O N

This invention is a device which is used for the purpose of improving a person's game, particularly during his or her training period, in sports which involves such actions as striking and throwing, as in tennis, golf, bowling, etc.

5 In playing such games, all the flexible interconnected parts of the anatomy tend to participate in all the motions called for in the game. Although, in some sports, such as gymnastics or wrestling this total participation, is in most cases of great value, in other sports, where the throwing
10 or striking is directed in a specific direction and under controlled power, some body motions can actually be detrimental to the proper playing of the game.

A game in which the above described difficulties appear more frequently than in others, is the game of tennis,
15 which will be used to illustrate the invention. In tennis a ball is struck by players playing against each other over a low net which divides the tennis court into half. The ball is struck by a tennis racket held in one hand by each of the players. The object of the game is to deliver the
20 ball rapidly and to a location not readily available to the opposite player, so that he is unable to return the ball successfully. In order to accomplish the above requirements, the ball must be properly aimed and struck with a great deal of power, which can best be done by swinging the arm from
25 the shoulder instead of bending it at the elbow, and preventing the hand from bending at the wrist.

During the learning period, the beginner is well advised to obtain the services of an instructor, however, instructors are not always available, particularly so, during
30 frequent practice periods. It is therefore the primary object



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of this invention to provide a means whereby a player can be automatically informed of errors, so that he can learn to avoid them.

In describing the invention reference can be made
5 to the attached drawings in which,-

Figure 1, is a front view of the invention,

Figure 2, is a diagram showing the invention in use, and

Figure 3, shows a variation of the invention.

10 In describing, the invention is shown consisting of an arm band 1 made of a strong flexible material such as cloth or plastic, having a buckle 2 at one end thereof, and a tongue 3 at the other end. The inside of the band 1 is lined with a soft component 4 of the adhesive system having
15 the trademark name of "Velcro". At its tongue end, the said arm band is provided with the other part of the "Velcro" T.M. adhesive.

At a suitable location along the arm band is attached a switch 6 which is activated by a pulling upon
20 a wire loop 7 which is connected to it. The said switch is powered by a fine wire cable 8 which is connected to batteries.

A short plastic or cloth loop 9 connects the switch 6 by means of the wire loop 7 to a finger band 10, which is also provided with "Velcro" T.M. adhesive 11.

25 In Figure 2 is shown the manner in which the invention is attached to the arm 12, of the person holding the tennis racket 13. The band 1 is wrapped around and held to the wrist. The band 10 is wrapped around one of the fingers of the hand, so that the loop 9 is fully stretched out when
30 the hand has a good grip on the tennis racket 13, and the wrist is not bent.

The wire 8 from the switch 6 leads to a sensor 14 which signals audibly or visually when the switch 6 is

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activated, thus, when the wrist is bent during the striking of the tennis ball, the loop 9 is pulled, activating the switch 6, causing the signal to be noted; the player realizes that he has bent his wrist, and avoids doing it again. The recorder also contains the power batteries. Where necessary, the recorder can keep a record of the number and frequency of the wrist bending occurrences.

The upper arm band 15, shown in Figure 2 is used purely as an additional support for the wire 8 when the sensor 14 is carried by the player at a distant location, usually attached to his clothing, and does not otherwise participate in the performance of the invention.

In Figure 3 is shown a variation in the invention. In this case the finger band 10 is replaced by a glove 16, and the sensor 14 is replaced by the recording or sound device 17 which is attached to the glove and is directly connected to the switch 6, by a wire 18 which also activates the said switch, when the wrist is bent.

From the above description it can be readily seen that this invention can also be applied to the study, diagnosis, and therapeutic treatment of malfunctions occurring in any location of the anatomy where two members of the body are flexibly joined, such as the ankles, knees, hips, shoulders, spine, neck, etc., or for correcting the performance in sports, where these locations are involved.

The audible and visual signals can also be accompanied by a graphical recording system which can be transmitted to a television viewer for an enlarged detailed study.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows,-

1. A device used in the training of athletes to properly perform motions required in the playing of such games wherein the throwing or striking of an object is involved, comprising means for emitting an audible or visible signal when an undesirable movement of a body part takes place, consisting of a pair of bands, each one of which is removably attachable to each of two adjacent, flexibly joined parts of the body; in combination with a pull type of electrical switch attached to one of said bands, and its pull cord directly attached to the other band, so that the bending of one of said body parts, in relation to the other, pulls and activates said switch, as long as the pull cord is in tension; an electrical sounding or lighting device which is activated by said switch; batteries for supplying power to the device; and a recording device for recording the number and frequency of said signals.

2. A device as set forth in Claim 1, used for the purpose of training a novice in the playing of tennis, not to bend the wrist when striking the tennis ball with the tennis racket, by attaching the switch containing band to the wrist of the hand that holds the racket, and the other band to one of the fingers of said hand, so that the bending of the wrist while striking the ball, emits a sound or flashes a light to warn the player that he is bending his wrist while striking the ball, and makes a graphic record of the bending movement.

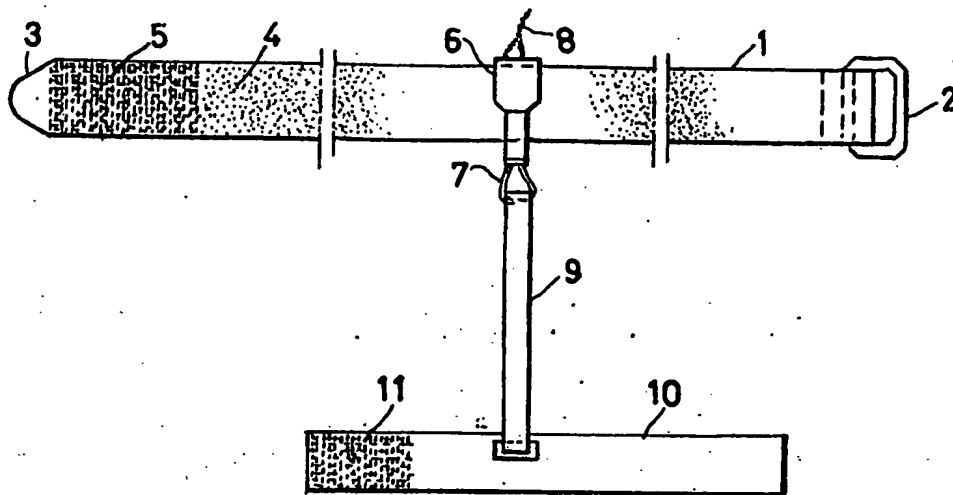
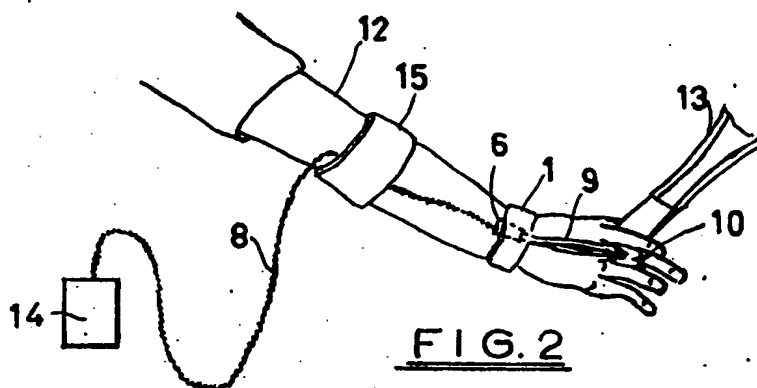
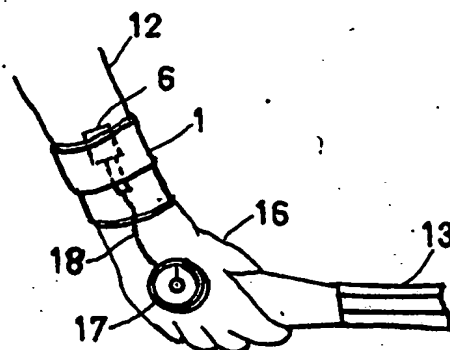
3. A device as set forth in Claim 2 which is used for the purpose of detection and treatment of malfunctioning flexibly joined parts of the anatomy.

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FIG. 1FIG. 2FIG. 3

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